# PATENT COOPERATION TREATY





PCT

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| Applicant's or agent's file reference<br>4 -32610A/HO 61 | **FOR FURTHER ACTION** | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
|---|---|---|
| International application No.<br>PCT/EP 03/08824 | International filing date *(day/month/year)*<br>08.08.2003 | Priority date *(day/month/year)*<br>09.08.2002 |
| International Patent Classification (IPC) or both national classification and IPC<br>C07D277/68 | | |
| Applicant<br>NOVARTIS AG et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

| Date of submission of the demand | Date of completion of this report |
|---|---|
| 16.02.2004 | 10.11.2004 |
| Name and mailing address of the international preliminary examining authority:<br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized Officer<br>Bérillon, L<br>Telephone No. +49 89 2399-7078 |

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/08824

## I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

**Description, Pages**

1-60 as originally filed

**Claims, Numbers**

1-14 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   *(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

   **see separate sheet**

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | | |
|---|---|---|---|
| Novelty (N) | Yes: | Claims | 7-8,14 |
| | No: | Claims | 1-6, 9-13 |
| Inventive step (IS) | Yes: | Claims | |
| | No: | Claims | 7-8,14 |
| Industrial applicability (IA) | Yes: | Claims | 1-14 |
| | No: | Claims | |

2. Citations and explanations

**see separate sheet**

**Re Item I**

**Basis of the report**

This opinion has been established as if the amendments dated 05.10.2004 had not been made since they have been considered to go beyond the disclosure as filed (rule 70.2(c)) for the following reasons:

- a disclaimer can only restore novelty against an accidental anticipation
- a disclaimer should not remove more subject-matter than is necessary (i.e. compound S1319 disclosed in D1 and D2).

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1: INFLAMMATION RESEARCH (2000),49(2), 86-94
D2: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, 1999, vol. 9, no. 10, pages 1361-1364
D3: US-A-5 648 370

1). Claims 1 to 6 and 9 to 13 lack novelty with respect to the compounds named S1319 disclosed in D1 and D2 (Article 33(2) PCT).
The subject-matter of claims 7 to 8 is novel over D1-D3 on account of the moiety $R^1ArR^2$ of the claimed derivatives of formula II.

2). The technical problem underlying the present application is seen in the provision of derivatives having beta 2 adrenoreceptor agonistic activity.
D3 which discloses benzothiazolone derivatives having that activity is considered to represent the closest prior art (see D3, formula I, column 5, lines 45, column 6, lines 22 to 24).
The claimed derivatives differ from those of D3 only on account of the presence of the hydroxy group on the ethylene linking group between the amino and the benzothiazolone moiety.
From the cited documents D1 and D2 it appears that the benzothiazolone derivatives

can further be substituted with a hydroxy substituent in that position with the retention of the activity of the resulting products.

Accordingly, the skilled man faced with the above mentioned technical problem and being aware that this structural modification would not impair the beta 2 adrenoreceptor agonistic activity of the derivatives would have considered the claimed derivatives of claim 7 as obvious solutions.

Inventive step could however be acknowledged if the present compounds were shown to exhibit unexpected properties over D1-D3 (e.g. a rapid onset of action, long duration of action etc.). Said properties establishing an inventive step should be clearly established for example with comparative tests and should extend to the whole claimed scope.